

and sodium, the alkali-earth metal ions of calcium and magnesium and a water-soluble or water-dispersible cation that contains boron or copper.

23. The method of claim 17 including the step of applying the composition to the body of the insect by forming the composition into a spray and spraying the composition into the air to form an aerosol that can coat out onto the surface of the insect.

24. The method of claim 17 including the step of providing a source of cations that is biomedically safe for humans.

25. The method of claim 17 including the step of providing a biocompatible preservative therein that is non-toxic to humans for extending the shelf life thereof.

#### **Remarks**

The present invention provides an insect eradicating or debilitating composition that is non-toxic to humans. In fact, it contains no toxic substances or insecticides whatsoever and can even be applied to the human body, but during use is applied to the insect pest, not to a person or a person's clothing. As noted on page 1, lines 12-15, the invention provides a safe, non-toxic insect control composition that is highly effective yet safe for the environment and especially for humans, including children and the unborn during their embryonic development. As provided in the last line of page 8, it is a surfactant-containing liquid formulation (emphasis supplied). It is devoid of insecticide. Also as noted in line 3 of page 5, the solution coats out onto the insect. Claim 1 has now been amended to recite these features of the present invention. While the

precise mode of operation is not known with complete certainty, it appears that the solution interferes with vital life functions, e.g., by blocking the spiracles which are the openings on the side of the thorax through which the insect breathes. As the Examiner knows, household insect eradicating compositions, such as sprays, contain poisonous or toxic insecticides such pyrethrum, DDT, DEET, permethrin, as well as insecticides like 2-hydroxyethyl-n-octyl sulfide, d-cis/trans allethrin and other toxic compounds. It is widely known that these toxic compounds are hazards to humans and domestic animals. A common household insect eradicating spray, Raid®, which includes the above noted insecticides has a precautionary notice on the can which states, "HAZARDS TO HUMANS AND DOMESTIC ANIMALS. CAUTION." **"Hazards to humans:** keep out of reach of children. Avoid contact with eyes, skin or clothing. Harmful if swallowed. Cover or remove exposed foods. Avoid contamination of cooking utensils and food preparation surfaces. Do not use on edible crops, etc." The label also says, "In case of contact, immediately flush eyes and skin with plenty of water. Get medical attention if irritation persists." In addition, the label points out that, "This pesticide is toxic to fish. Keep out of lakes, ponds and streams. Do not contaminate water by cleaning of equipment or disposal of waste. As the Examiner is aware, this is the accepted state of the art.

The present applicant has taken an entirely different approach that is not suggested by such toxic insecticide containing commercial products or the art of record. In spite of the fact that the applicant's claimed composition is devoid of toxic agents or substances, the insects die. Most insects move little if any after being sprayed with the present composition. In use, mosquitoes stop moving in about 1-2 seconds and then die. Flies, such as house flies, stop moving in about 10-50 seconds and then die. The aqueous spray composition disclosed herein has also been found

effective on hornets and wasps in less than one minute following exposure. (See page 9, lines 3-8.)

#### AMENDED CLAIMS 1, 6, 8 & 9

Claim 1 has been amended to render it more clear and unambiguous, and claims 6, 8 and 9 have also been appropriately amended to overcome the objections raised by the Examiner under 35 U.S.C. 112. For example, claims 6 and 9 make it clear that the cations and the preservative are non-toxic to humans. Claim 8 is similar. (See page 6, line 7 and page 1, lines 11 and 13.) In the amendments that have been made, care has been taken to add no new matter. Favorable consideration and entry of the amendments without objection is therefore believed to be in order and is respectfully requested.

Examples 11 and 13 were corrected because example 5 contained corn syrup solids and example 2 did not have a thickening agent.

#### CLAIM 1

Claim 1 as amended calls in part for the following elements:

- The composition is non-toxic and safe for humans.
- The composition is devoid of insecticide.
- The composition is a liquid.
- The composition coats out onto an insect.
- The surfactant is present in an amount effective to interfere with vital functions of the insect.

A soluble or dispersible thickening agent is non-toxic and safe for humans.

The insect is debilitated or killed when the composition is applied to the body of the insect so as to become coated thereon.

The term "insecticide" has a clear meaning in the art and should not be objected to although the insects die. Even a pillow which contains no insecticides or other toxic substances can be used to interfere with vital life processes by killing an animal through suffocation and so can the present invention without insecticide.

#### THE REJECTION

Claims 1, 3, 4, 7 and 9 were rejected under 35 U.S.C. 102(b) as being anticipated by Black 5,536,452. Claims 1-9 were also rejected as unpatentable under section 102 in view of Nishimura, *et al.*, JP 54-49303 and Dupuis, *et al.*, 6,120,780.

#### BLACK

The applicant believes that claim 1 as now amended recites a composition that is not only different from that described in the prior art, but is patentably distinct therefrom. With respect to Black, the Examiner states that EDTA is identifiable as a soluble thickener. The applicant respectfully disagrees. The Black reference has been reviewed, but nothing could be found in column 2 indicating that EDTA is a soluble thickener. To the contrary, EDTA is used as a chelating agent for tying up metals such as calcium, to prevent scum formation. (See column 2, lines 47 and 53.) As the Examiner will note, this reference does not disclose EDTA to function as thickener. More importantly, the use of a thickener in the Black composition is

contraindicated! Just the opposite of thickening it, Black tries to keep the viscosity low, he even adds alcohol to reduce the viscosity (column 3, lines 7 and 8), not raise it. Consequently, the use of a thickening agent as claimed by the applicant runs counter to the teachings of Black. Favorable consideration and removal of the stated grounds for rejection based upon Black which teaches one to reduce viscosity is therefore believed to be in order and is respectfully requested.

Nishimura, *et al.*, discloses an insecticide paste which is spread onto wood. It contains a mixture of water and hydrocarbon, an insecticide, a surfactant, a thickener, and a solvent to form a paste (emphasis added). By contrast, the applicant's composition is devoid of insecticide and is a liquid that coats out onto an insect such that the insect is debilitated or killed thereby when the composition is applied to the body of the insect so as to become coated thereon. As the Examiner will recognize, a paste will not coat out onto an insect body and is not intended to. Instead, it is intended to be thick (a paste) so that it can be spread onto a wood panel and won't run off. It is indeed unobvious and in fact remarkable based on the teachings of Nishimura that even if the insecticide is omitted, a composition could be made to kill or debilitate an insect when the composition is present as a liquid that is adapted to coat out onto the insect's body. Surprisingly, the applicant's composition is safe and non-toxic enough so that it can come in contact with a human, yet the insects die even though the composition is devoid of insecticide. It is just this kind of discovery for which the US Patent Laws were enacted; to grant to inventors, for a limited period of time, an exclusive right to their discoveries. Favorable consideration and recognition of this advance as now clearly set forth in amended claim 1 is believed to be in order and is respectfully requested.

Moreover, Nishimura depends upon tributyl tin oxide, a toxic insecticide to kill the insects, defeating the whole purpose of the present invention, even if it's less toxic than kerosene.

Clearly Nishimura cannot accomplish important advantages and objectives of the present invention.

While no patentable weight can be given to an intended future use, the applicant's composition is different from Nishimura, it acts in a different way and produces a different result; destruction of the insects but yet provides safety for the environment and especially for humans including children and the unborn during their embryonic development.

#### DUPUIS, ET AL

The claims have been rejected as unpatentable over Dupuis, *et al.* Dupuis discloses a thickening agent for cosmetic use. Although some of the examples include the use of surfactants, there is nothing at all to suggest that the surfactant be present in an amount effective to interfere with the vital functions of an insect as claimed. Thus, sodium lauryl ether sulphate in the amount of 10 grams, or about 9%, is not disclosed to be an amount effective to interfere with the vital functions of an insect as claimed. Consequently, Dupuis neither teaches or suggests the composition now clearly set forth in claim 1 as amended or claim 17. The applicant notes that the specific language "an amount effective to achieve (a certain result)" has been approved by the courts as an acceptable means of distinguishing an invention from the prior art.

Only Example 5 has anything to do with insects and the composition is a repellent gel which is applied to human skin to repel insects. A gel is not liquid and therefore will not coat out on the

surface of an insect. Most importantly, Dupuis teaches one to include DEET (ethyl N-butyl-N-acetylaminopropionate) (about 15%) to make the composition effective against insects. Typical warnings for DEET containing products are, for example, "PRECAUTIONARY STATEMENT: HAZARDS TO HUMANS - WARNING: Harmful if swallowed. Do not apply over cuts, wounds, or irritated areas, etc. May cause eye injury." This warning appears on a commercial household DEET product called Muskol®. Accordingly, the Dupuis product depends upon a hazardous ingredient and thus has a different composition from that claimed, is used differently, acts differently and produces a different result. Moreover, neither it nor the other references contain the fundamental nugget that makes the applicant's invention successful, namely the discovery that a non-toxic liquid without an insecticide and having the composition claimed can be used to interfere with vital life functions of the insect, e.g. by suffocating the insect, plugging the spiracles or by damaging its outer protective exoskeleton to thereby kill the insect. See, for example Akzo N. V. v. US International Trade Commission, 1 USPQ 2d 1241, 1245 (Fed.Cir.1986), cert. denied, 482 US 909 (1987) holding:

"Under 35 USC § 102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art... In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in possession of the public."

See also Scripts Clinic and Research Foundation v. Genentech, Inc. 18 USPQ 2d 1001, 1010 (Fed.Cir.1991) holding:

"Invalidity for anticipation requires that all of the elements and limitations of the claim are found within a single prior art reference... There must be no difference between the claimed invention and the reference disclosure as viewed by a person of ordinary skill in the field of the invention."

In view of the important differences of the claimed invention and the prior art, these case authorities clearly indicate that the amended claims should be allowed.

Favorable consideration and allowance of the claims as unobvious over the Dupuis references believed to be in order and is respectfully requested. Favorable consideration and allowance of claims 1-9 as amended is respectfully requested.

#### NEW CLAIMS 17-25

New claim 17 claims the invention of claim 1 in method form as a different aspect of the same invention and is not directed to the non-elected method covered in claims 10-16. Accordingly, it is respectfully submitted that new claim 17 should not be rejected as being directed to a non-elected invention. In this connection the Examiner is referred to *In re: Kathawala* 28 USPQ 2d 1785, 1788 (Fed.Cir.1993) citing *In re: Pleuddemann*, 910F 2d 823, 15 USPQ 2d 1738 (Fed.Cir.1990) holding that:

when a new and useful compound, or a group of compounds is invented or discovered, having a particular use, it is often the case that what is really a single invention may be viewed legally as having three or more different aspects permitting it to be claimed in different ways, for example: (1) the compounds



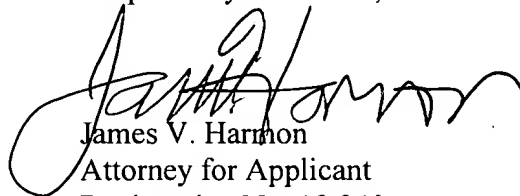
themselves; (2) the method or process of making the compounds; (3) the method or process of using the compounds for their intended purpose (emphasis supplied).

Consequently, expressing claim 1 as a method in claim 17 is a different aspect of the same invention that is claimed in a different way and hence is unobjectionable as a different invention or different species. Favorable consideration and entry of method claims 17-25 as another aspect of the elected invention is therefore believed to be in order and is respectfully requested.

There is nothing in the art of record that discloses or suggests the method now clearly set forth in claim 17 for the reasons set forth above in connection with the Black Nishimura and Dupuis references. Favorable consideration and allowance of claim 17 is therefore believed to be in order and is respectfully requested.

Favorable consideration and a prompt notice of allowance is believed to be in order and is respectfully requested.

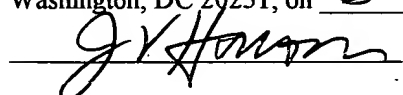
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